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80/R/B/9 Spring Barley Controlled Drop Application of Tridemorph

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80/R/B/9

SPRING BARLEY

CONTROLLED DROP APPLICATION OF TRIDEMORPH

Object: To compare controlled drop application with conventional spraying on the deposition of spray material, control of mildew and on the yield of s. barley - Gt. Harpenden II.

Sponsors: F.T. Phillips, P. Etheridge, A.J. Arnold, B. Pye.

Design: 3 randomised blocks of 11 plots.

Whole plot dimensions: 4.27 x 24.4.

Treatments: All combinations of:-

1. SPRAYER Sprayer and drop density:
 - CDA 1 Controlled drop application sprayer, standard drop density
 - CDA 2 Controlled drop application sprayer, twice standard drop density
 - HYDRAUL Hydraulic sprayer
2. TRI RATE Rates of applying tridemorph (on 12 June, 1980):
 - 1 Standard, 525 g
 - 1/2 Half standard, 263 g
 - 1/4 Quarter standard, 132 g

plus two extra plots

EXTRA

- NONE Unsprayed
- CDA R 1 Controlled drop application sprayer, reduced drop density, applying standard rate tridemorph

NOTES (1) CDA sprayer applied tridemorph in 19 l.

(2) Hydraulic sprayer applied tridemorph in 340 l.

Basal applications: Manures: (20:10:10) at 450 kg, combine drilled.

Weedkillers: Dicamba with mecoprop and MCPA (as 'Banlene Plus' at 5.0 l) in 250 l.

Seed: Wing, sown at 160 kg.

Cultivations, etc.: - Ploughed: 13 Nov, 1979. Spring-tine cultivated:

5 Apr, 1980. Seed sown: 6 Apr. Weedkillers applied: 25 May. Combine harvested: 1 Sept. Previous crops: S. beans 1978, w. wheat 1979.

NOTE: Observations were made on patterns of spray deposition using very small quantities of permethrin as a chemical marker. Mildew was assessed twice during the season.

80/R/B/9

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

| TRI RATE SPRAYER | 1 | 1/2 | 1/4 | MEAN |
|---------------------|------|------|------|------|
| CDA 1 | 4.72 | 4.36 | 4.96 | 4.68 |
| CDA 2 | 4.95 | 4.72 | 4.60 | 4.76 |
| HYDRAUL | 5.65 | 4.88 | 4.54 | 5.02 |
| MEAN | 5.11 | 4.65 | 4.70 | 4.82 |

| EXTRA | NONE | CDA R 1 | MEAN |
|-------|------|---------|------|
| | 4.34 | 4.81 | 4.57 |

GRAND MEAN 4.77

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

| TABLE | EXTRA | SPRAYER | TRI RATE | SPRAYER TRI RATE & EXTRA |
|-------|-------|---------|----------|--------------------------------|
| SED | 0.304 | 0.175 | 0.175 | 0.304 |

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

| STRATUM | DF | SE | CV% |
|---------------------|---------|-------|-----|
| BLOCK.WP | 20 | 0.372 | 7.8 |
| GRAIN MEAN DM% | 84.4 | | |
| PLOT AREA HARVESTED | 0.00520 | | |